

a tube-shaped discharge electrode fashioned so as to enclose said plasma generation region;

a first high-frequency electric power applicator that applies first high-frequency electric power to said discharge electrode;

a first magnetic force line generating portion fashioned so as to enclose said plasma generation region and positioned near one end portion of said discharge electrode in the direction of a center axis of said discharge electrode; and

a second magnetic force line generating portion fashioned so as to enclose said plasma generation region and positioned near the other end portion of said discharge electrode in the direction of the center axis of said discharge electrode.

23. (Amended) A plasma generation apparatus according to claim 42, wherein said first and second magnetic force line generating portion fashioned so as to generate magnetic force lines having portions roughly parallel to the center axis of said discharge electrode, such that the length of said parallel portions becomes longer the closer said magnetic force lines are to said center axis, said magnetic force lines being capable of trapping electrons at least in a center of said plasma generation region and being shaped so that they do not intersect said two walls in the center of said plasma generation region.

24. (Amended) A plasma generation apparatus according to claim 22, wherein said first magnetic force line generating portion is fashioned so as to output magnetic force lines in said plasma generation region;

said second magnetic force line generating portion is fashioned so as to be input said magnetic force lines been output in said plasma generation region by said first magnetic force line generating portion.

25. (Amended) A plasma generation apparatus according to claim 24, wherein

said first magnetic force line generating portion comprises a magnet, and is fashioned so that a N pole of said magnet faces said plasma generation region and a straight line connecting a N pole and a S pole of said magnet intersects said center axis of said discharge electrode about at a right angle; and

said second magnetic force line generating portion comprises a magnet, and is fashioned so that a S pole of said magnet faces said plasma generation region and a straight line connecting a N pole and a S pole of said magnet intersects said center axis of said discharge electrode about at a right angle.

35. (Amended) A plasma generation apparatus according to claim 42, further comprising:

12 a position adjuster that adjusts positions of said two walls in said center axis of said discharge electrode.

36. (Amended) A plasma generation apparatus according to claim 42, wherein one of said two walls is used as gas diffusion plate for diffusing said discharge gas in said plasma generation region; and

the other of said two walls, when said plasma is used in subjecting objects to be treated to prescribed treatments, is used as a holder for holding said objects to be treated.

37. (Amended) A plasma generation apparatus comprising:  
a vacuum vessel having a plasma generation region established in the interior thereof;

a gas inductor that inducts discharge gas into said interior of said vacuum vessel;

an exhaust that exhausts the atmosphere in the interior of said vacuum vessel;

a tube-shaped discharge electrode fashioned so as to enclose said plasma generation region;

a first high-frequency electric power applicator that applies first high-frequency electric power to said discharge electrode; and

a magnetic force line generator fashioned so as to enclose said plasma generation region, that generates magnetic force lines having portions roughly parallel to a center axis of said discharge electrode, such that the length of said parallel portions becomes longer the closer said magnetic force lines are to said center axis, said magnetic force lines being capable of trapping electrons at least in a center of said plasma generation region.

41. (Amended) A plasma generation apparatus according to claim 43, wherein said two walls are electrode.

Please add new claims 42, 43, 44 and 45 as follows:

--42. A plasma generation apparatus according to claim 22, further comprising:

two walls positioned so as to sandwich said plasma generation region between them, in the direction of the center axis of said discharge electrode, for defining the scope of said plasma generation region in the direction of the center axis.--

--43. A plasma generation apparatus according to claim 37, further comprising:

two walls positioned so as to sandwich said plasma generation region between them, in the direction of the center axis of said discharge electrode, for defining the scope of said plasma generation region in the direction of the center axis,

wherein said magnetic force line generator is fashioned so as to generate, as said magnetic force lines that pass through the center of said plasma generation region, magnetic force lines which are shaped so that they do not intersect two walls.--

--44. A plasma generation apparatus, comprising:

a vacuum vessel having a plasma generation region established in an interior thereof;

a gas inductor that inducts discharge gas into said interior of said vacuum vessel;

an exhaust that exhausts an atmosphere in the interior of said vacuum vessel;

a tube-shaped discharge electrode fashioned so as to enclose said plasma generation region;

a first high-frequency electric power applicator that applies first high-frequency electric power to said discharge electrode; and

two magnetic force line generating portions in the periphery of said discharge electrode, fashioned so as to enclose said plasma generation region, and fashioned so as to be spaced at a prescribed distance apart from each other in the direction of a center axis of said discharge electrode, at least a part of said two magnetic force line generating portions disposed between one end portion and the other end portion of said discharge electrode.--

--45. A plasma generation apparatus, comprising:

a vacuum vessel having a plasma generation region established in an interior thereof;

a gas inductor that inducts discharge gas into said interior of said vacuum vessel;

an exhaust that exhausts an atmosphere in the interior of said vacuum vessel;

a tube-shaped discharge electrode fashioned so as to enclose said plasma generation region;

a first high-frequency electric power applicator that applies first high-frequency electric power to said discharge electrode; and

only two magnetic force line generating portions in the periphery of said discharge electrode, fashioned so as to enclose said vacuum vessel and fashioned so as to be